

D R A F T
NPIC/TDS/D-____-67
27 June 1967

MEMORANDUM FOR THE RECORD

SUBJECT : Chip Comparator Status Meeting

ATTENDEES:

25X1A

1. On the 22nd of June the above listed individuals were given an informal briefing on the current status of the chip comparator problems. The significant topics discussed were:

a. The recent problems encountered and the reliability and repeatibility obtained to date. The most recent problems have all been related to the negator springs and the automatic bias control circuits installed as the most recent modification.

25X1A

is currently working on a redesigned negator spring fix retrofit package which hopefully will eliminate the backlash and jerking movement problems presently encountered. Concerning the automatic bias control, the avenue of approach is less clear, but based on the latest information, it appears that a tolerable operation approach is available until a more acceptable approach can be worked out, preferably by returning at least two of the 405 B machines to The

25X1A

DECLASS REVIEW by NIMA/DOD

primary problems ~~that~~ remain are the apparent RF interference from the drive motors and determining how long the units will remain stable without resetting the bias memory (a relatively simple operator procedure).

b. Photo cell instability. It was pointed out to the attendees that the current visit by [] personnel was most likely triggered by an instability (previously unknown to [] in the cl~~3~~rex photo cells. Based on information obtained from the cell manufacturer it appears that after prolonged absence of exposure to light, the photo cells become unstable and require up to 80 hours of operation before they become stable again. After the last visit by [] to reinstall the interfometers significant shifts in the bias voltage were observed and it is assumed that this was a result of the photocell performance. The operational components will have to consider their operational cycle of the machines to prevent photocell instability or a retrofit will have to be made to the machine to insure that adequate light intensity hits the cells at all times. In addition to this the warm up time in general was discussed.

c. Measurement Accuracy in terms of repeatability. It was pointed out that measurement repeatability runs had been made recently over 4 1/2" distances with maximum deviations of

no more than three counts (approximately .8 microns)
indicating that the comparator has intrinsic capability
once reliability can be achieved.

2. It was requested that an operation² procedure document be prepared to insure that the machine is properly operated and they have some feel for what maintenance criteria are required. This is particularly important in view of the sensitivity of the chip comparators.

3. It was also requested that the environmental requirements necessary to maintain the instrument at peak performance be set down in writing and forwarded to them at the earliest possible date so that they can take the necessary action in requesting facility modifications.

4. In order to minimize testing and checkout on the remaining five machines I intend to take any necessary action to ship at least two complete chip comparators back to so that the maximum
amount of debugging can be done at the factory.

25X1A

Development Staff, TDS

25X1A

*Conf**Draft**Memo for the Record**Subject: Chip Comparator Status Meeting*

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25X1A

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B) Photo cell instability. It was
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25X1A [redacted]) in the Clarex photocells.

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Chip Computer Operational Status Meeting

X1A

IAS
TID
PAG
DIA
TDS



Current status of machines

2 To be returned

Repeatability obtained to date

Automatic Bias Control bit problems

Photo Cell Problems

Warm up time

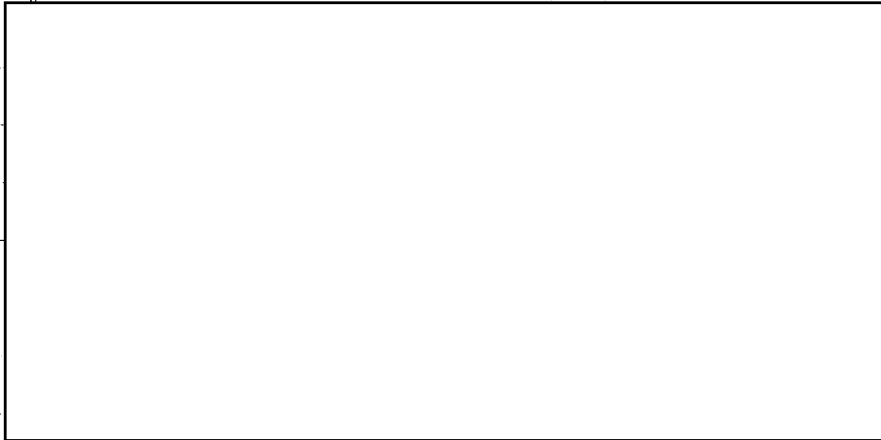
Equipment performance staff to assist
in evaluating machine

Environmental Requirements

Net mwp $\pm 2^\circ\text{F}$ ~~55%~~ ~~55%~~ $55\% \pm 5\%$ Humidity

Maintenance Problems

25X1A



microposition set problem
Photo Cell problem.

Operational Status

~~Clear~~ Environmental Cando
7 Wet mop floors & clean walls weekly
 $\pm 20^{\circ}\text{F}$ $\pm 5\%$

ILLEGIB

25X1A

24 Oct 67 - [] MFR

25X1A

26 Sept - [] letter Regff/funds Cont []

15 Sept - Memo J/Ex Dir - []

25X1A

30 Aug 67 - Memo - Ex Dir []

30 June 67 - Letter - [] to [] requesting 2 roclines ^{be analyzed}

25X1A

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